# VALUE ADDITION ASSESSMENT OF RICE PROCESSING IN ANAMBRA EAST AGRICULTURAL ZONE OF ANAMBRA STATE


## ABSTRACT

This study assessed the extent to which values are added to rice and how profitable rice becomes when value is added to it through processing in Anambra-East Agricultural zone of Anambra State Nigeria. A multi-stage random sampling technique was used to obtain information from descriptive statistics and gross margin analysis. Results show that majority of the farmers were males, aged 41-50 years engaged fully in value addition in rice production and processing. This indicated that the younger youths are rarely found in the business, majority of the farmers stopped at primary level of Education and their mean years of experience was 20 years.

The gross margin/net profit for paddy production was ₦175, 000, while the gross margin net profit for milled rice is ₦290, 000 and the benefit cost ratio for paddy production is 2.4.1 while that of milled rice is 2.2.1.

The most serious problems confronting rice farmers in the zone are disease and pest infestation on cultivated rice crop, lack of access to land for rice cultivation, inadequate irrigation, inadequate extension agent contact, poor access to institutional credits.

Bad rural roa.d network, inadequacy of modern storage and processing facilities and poor/low level of education. It is therefore recommended that farmers should be encouraged to participate actively in farmers/social organizations and cooperative societies in order to strengthen their group action since such organization act as effective channels for extension information delivery system to farmers. Efforts should be made to provide adequate input to the farmers to eschew competitiveness among inputs used.

One of the major problems to the adoption of value addition in rice production technologies was poor access to institutional credit. Lack of access to credit and low patronage of farmers to banks are currently

seen as a result of high interest rate andlack of collateral security by the farmer. Government should therefore put efforts towards establishing micro finance and agricultural banks in some of the remote areas where farmers don't have access to banks and at the same time making the interest rate and collateral security affordable to them. Extension agent should educate farmers on proper use of herbicides in order to reduce weeds infestation in their farm through self-help efforts.

## INTRODUCTION

Rice (oryzasativa) is a staple food in many countries of Africa and other parts of the world. This is the most important staple food for about half of the human race (Imolehum and Wada, 2000).

According to United State Agency for international Development (USAID, 2010), Nigeria rice sub sector is dominated by weak and insufficient producer-market linkage due to poor infrastructure and limited efficiency of distribution network which has resulted to low productivity and participation of farmers in the rice field. In order to reduce the rate of rice importation, Saka and Lawal (2009) were of the opinion that disseminating improved varieties and other modern inputs as a composite package to rice farmers is very important. Nwife, igwe and Waka/suki (2008) indicated that the adoption of technologies and improved management practices should lead to substantial yield increase in rice production. Adoption of an innovation within a social system takes place through its adoption by individuals or groups. In view of this, Neglash (2007) defined adoption as the integration of an innovation into farmer's normal farming activities over an extended period of time. Moreso, adoption is not a permanent behaviour, this implies that an individual may decide to discontinue the use of an innovation for a variety of personal, institutional, and social reasons, one of which might be the availability of another practice that is better in safety farmer's needs. Therefore, value addition in the production and processing of rice implies all the activities, processes or strategies and distributions of rice which in one way or the other contributes to benefit/utility maximization (Owoh 2008).

Hence, assessment of value addition in rice production seeks a careful exploration into all the activities, processes or strategies of operation carried out in the production, processing, packaging and distribution of rice which contribute to the maximization of profit or utility derived from rice.

## METHODS

The study area for this research was Anambra State. The state is bounded by Delta State to the West, Imo state to the South, Enugu state to the East and Kogi State to the North.

Anambra State comprised of 21 Local Government Area and is occupied by the Igbo ethnic group who by nature are farmers, fishermen, craftsmen and traders. The major rice producing areas in the State are Anambra East and West, Orumba North and South, Aroka North and Ayamelum Local Government Area. Farmers in Anambra State cultivate the following rice varieties 14:16, BG, Rbox, FARO – 40.42 and FARO – 44 Rice varieties. Multistage sampling technique was used for this study. In the first stage 1 zone out of the four zones was purposively selected due to their popularity in rice production and these includes Anambra zone.

In the second stage one block from the selected zone was purposively selected for this study. Here, Anambra East block was selected. This selection was due to their massive production of rice. In the third stage, 3 circles each from the block were purposively selected based on their popularity in rice production which included, Igbariam, Agulu, and Nando. This gave a total of 3 circles. In the fourth stage, 30 rice farmers were selected from the list of information using random sampling techniques which gave a total sample size of 90 respondents. Primary data were collected from personal observation, oral and written questionnaire relevant to the research topic. The data on the cost and returns to rice processors were collected from processors and marketers of rice. Secondly data were collected from related journals and textbooks, objectives were analyzed using descriptive statistics, gross margin and likert mean score.

RESULT/DISCUSSION

**Table 1 Using Gross margin analysis for assessment of profitability of value addition per hectare of rice in Anambra State.**

| Operation/items | Unit | Quantity | Unit Price | Total value |
|---|---|---|---|---|
| Paddy production cost | | | | |
| Planting material | | | | |

| | | | | |
|---|---|---|---|---|
| | Kg/basin | | | 14,000 |
| Rent on land | Hectare | 1 | 22,500 | 22,500 |
| Purchase of systemic herbicides | Litre | 2 | 1,000 | 2,000 |
| Purchase of contact herbicides | Litre | 2 | 2,500 | 5,000 |
| Purchase of urea bag | Bag/kg | 1 | 6000 | 6,000 |
| Purchase of insecticide | Litre | 1 | 1500 | 1,500 |
| Rice nursery establishment | Hectare | 4 | 750 | 3,000 |
| **Land preparation** | Hectare/manday | **1** | 22,000 | 22,000 |
| Mechanical or manual clearing, ploughing and harrowing seed rice broadcasting | Manday | 1 | 2,500 | 2,500 |
| Fertilizer application | Bag/kg | 1 | 8,500 | 6,500 |
| Bird scaring | Man-day | 4 | 2500 | 10,000 |
| Harvesting (cutting & gathering)/ panicle harvesting | Hectare | 1 | 14,000 | 14,000 |
| Harvesting (mechanical or manual threshing) | Hectare | 1 | 16,000 | 16,000 |
| **Total production cost per hectare** | | | | 125,000 |
| Processing cost: Handling and transportation of produce | Bag/kg/hectare | **1** | 20,000 | 20,000 |

105

106

| | | | | |
|---|---|---|---|---|
| Processing (rice | Drum hectare | 10 | 6000 | 60,000 |

| | | | | |
|---|---|---|---|---|
| parboiling) | | | | |
| Milling | Bushel | 150 | 200 | 30,000 |
| **Total processing cost** | | | | 110,000 |
| **Total production and processing cost per 1ha** | | | | 235,000 |
| **Revenue from 1 hectare of rice:** | | | | |
| **Total revenue from paddy rice** | Bags/100kg/ha | 40 | 7500 | 300,000 |
| Total revenue from milled rice | Bushel/5kg | 150 | 3500 | 525,000 |
| **Gross margin/Net profit for paddy rice:** | | | | 17,500 |
| **Gross margin/Net profit for milled rice:** | | | | 290,000 |
| Benefit/Cost ratio for paddy production | | | | 2.4 |
| Benefit/Cost ratio for milled rice production | | | | 2.2 |

**Source: field survey 2018**

Total production cost per hectare = 125,000

Gross margin for production of paddy = total revenue – total variable cost

Gm = 300,000 – 125,000

Gm = 175,000

Total processing cost per hectare = 110,000

Gross margin for processing of paddy into milled form = total revenue – total variable cost

Gm = 55,000 – 110,000

Gm = 290,000

Benefit cost ratio = Total Revenue

Total Cost

BCR FOR PADY RICE = 300,000

125,000 = 22.4:1

BCR FOR MILLED RICE = 525,000

110,000 = 2.2:1

**Table 1** shows gross margin analysis of one hectare of rice production of the rice farmers in Anambra State.

An entry in the table reveal that total rice production costs per ha was N 125,000 while total production and processing costs was N235,000. Table 1 also reveal that the average total revenue from paddy sale per ha is N300,000 while the total revenue from milled form was N 525,000.

The findings imply that rice farmers realized more income from selling their produce in milled form than in paddy form.

Table 1 further reveals that farmers made gross margin/net profit of N175,000 from paddy sale while in milled form, the farmers made gross margin/net profit of N290,000. This implies that rice farmers made profit in selling their rice in both paddy and milled forms. Also, further analysis in the same table indicates that benefit/cost ratio (BCR) per ha of paddy production was 2.4 while the BCR for milled rice production were 2.2, this means that for every Naira invested in paddy and milled rice

production, the farmer realizes N 2.4 and N 2.2. This implies that selling rice in paddy form is more cost effective than milled form.

## CONCLUSION

With respect to the findings of this study, majority of the famers were middle aged and literate which shows that they will easily adopt value addition technologies.Majority of the famers were also males and have a good family size which is also an advantage for adoption of value addition in rice. It was also observed that majority of the famers belong to famers cooperatives which will enhance accessing information and credit facilities. It was also observed that there greatest impediment were poor access road,high cost of land acquisition, poor input supply,lack of extension agents for information.It is therefore recommended that government should assist in input supply,good access road and review of land laws.Thebottle neck associated with institutional credits should be reduced especially for rice processors. More soil fertility management strategies should be addressed

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